

RCRA RECORDS CENTER
FACILITY Aerovox Inc
I.D. NO. MA0062319777
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OTHER (R1C)

AEROVOX INCORPORATED
New Bedford, Massachusetts

Aerovox
1.3
248140



SDMS DocID

248140

Kimberly Tisa
Kimberly Tisa, Inspector

Dan J. Granz
Dan Granz, Inspector

J. Pimpare
Jay Pimpare, Inspector

June 25-26, 1997
Inspection Date

6/27/97
Date Report Written

I. Facility Name, Address:

Aerovox Incorporated
740 Belleville Avenue
New Bedford, MA 02745-6194

II. Inspection Participants:

EPA: Kimberly Tisa, TSCA PCB
Dan Granz, OEME/EIA
Jay Pimpare, OEME/EIA

Aerovox: Peter Szwaja, Environmental Control Engineer

III. Background:

Aerovox is a manufacturer of various types of capacitors, most of which are oil filled. The New Bedford facility has been in operation since 1938. While the site was purchased by Aerovox in 1938, it became Aerovox Inc. in 1978. PCB capacitors were manufactured from approximately the mid 1940's until October 14, 1978, during which time approximately 100,000,000 lbs. of PCBs were used.

On May 29, 1997, EPA's TSCA PCB program conducted an inspection of the Aerovox facility under the authority of Section 11 of the Toxic Substances Control Act (TSCA) to determine compliance with the PCB Rules. Based on documentation presented to EPA during the inspection as well as visual observations, a follow up sampling inspection was scheduled to determine whether there is PCB contamination in the floors in the impregnation room and in the solvents and oils currently in use for capacitor manufacturing. The following report details this inspection.

IV. Inspection:

At approximately 10:45 P.M. on June 25, 1997, Dan Granz, Jay Pimpare, and Kimberly Tisa met with Peter Szwaja for purposes of conducting a TSCA PCB sampling inspection. After presentation of inspectors' credentials, notices of inspection and confidential business information were presented to and signed by Mr. Szwaja.

The sampling was conducted in two phases. The first phase consisted of sampling the impregnation tank room floor and the second phase consisted of sampling the clean and dirty oils tanks, the degreasing units, and the recovered solvents. Attachment 1, the Quality Analysis/Quality Control document, details the sampling and analytical protocols as well as the field quality controls used for each phase.

The first phase of sampling was conducted in the tank impregnation room on the second floor. A schematic of the room and the sampling points are shown in Attachment 2. Twenty floor samples and 2 duplicates were collected. Mr. Szwaja was provided with a split sample from each sampling location. Of the 20 floor samples collected, 12 were selected randomly from a grid-based sampling scheme. Eight of the samples were biased (Grid points 85, 82, 95, 93, 69, 48, 30, and 54) samples selected from a visual inspection of the area. Mr. Szwaja was present during this phase. Three other Aerovox employees were also working in the area.

The second phase of sampling began in the first floor tank room. A representative sample of each type of oil (except DOP oil as noted below) was collected. The following outlines deviations from the original sampling plan and/or observations made:

1. Two of the oils, the Polybutene and the DOP/MIPB Blend, were found in more than 1 tank. A grab sample from only 1 tank of each oil type was collected for analysis rather than a composite sample from all tanks of each oil type.
2. The DOP/MIPB blend-dirty tanks (north tank) samples were collected last (after all sampling including the solvents) because of high vacuum in the tanks.
3. No sample was collected for the mineral oil-dirty tank since the tank was empty.

4. No sample was collected from the castor oil-dirty tank. The castor oil circulates directly through Fuller's Earth and into a clean tank. There is no dirty tank.
5. No sample was collected from the DOP tank in Room 2. The system is new and the room was never used for PCBs.

Next, samples were collected from the degreasing and recovered solvent tanks. The following outlines deviations from the original sampling plan and/or observations made:

1. No sample was collected from the Final Test recovered solvent tank. The tank was empty.
2. The Final Test degreasing tank was comprised of 4 distinct subtanks; however, the same solvent does contact each subtank. One sample was collected from subtank 3.

V. Closing Conference:

K. Tisa informed Mr. Szwaja that the analytical results of the samples collected would be completed in 2 to 3 weeks. Mr. Szwaja was presented with and signed a copy of the declaration of confidential business information and the receipt for documents forms. Mr. Szwaja provided copies of analytical results of split samples taken during the May 29, 1997 inspection

VI. Samples and Documents:

As listed in the receipt for samples and documents.

III. Work/Sampling Plan **ENDFIELD**

Title Page

6/17/97

Aerovox, Co.

New Bedford, MA

Sampling of oils and floors

Summer 1997

U.S. Environmental Protection Agency

New England

Office of Environmental Measurement and Evaluation

Office of Investigations and Analysis

Project Officer: **Marianne Milette**, Project Manager

Project Officer Signature: 

Office of Quality Assurance Acceptance:

Signature: _____

Date: _____

III. Work/Sampling Plan

Title Page

6/17/97

Aerovox, Co.

New Bedford, MA

Sampling of oils and floors

Summer 1997

U.S. Environmental Protection Agency

New England

Office of Environmental Measurement and Evaluation

Office of Investigations and Analysis

Project Officer: **Marianne Milette**, Project Manager

Project Officer Signature: _____

Office of Quality Assurance Acceptance:

Signature: _____

Date: _____

A. A. B. Brown
6/17/97

1. Project Name: Aerovox, Co.
Newbedford, MA
2. Site No: none
3. Project Requested By: Marianne Milette
Project Manager
4. Date of Request: June 3, 1997
5. Date of Project Initiation: June 3, 1997
6. Project Officer: Marianne Milette
7. Quality Assurance Officer: Andy Beliveau
8. Project Description:

A. Objective and Scope Statement:

This sampling effort will generate data for determination of extent of PCB contamination on the floors of the impregnation room and the possible PCB contamination of the non-PCB oils and solvents currently used at the facility. EPA's Investigation & Analyses Unit with assistance from OES (TSCA personnel) plans to collect the samples from the facility. The sampling will include wood floor samples, 5 clean oil samples, 5 "dirty" oil samples, 3 samples of recovered solvent after distillation, and 3 solvent samples from either the 3 solvent degreaser tanks or 3 stills which ever is accessable. All the stills and solvent degreasers may not have useable access ports for sampling. If there is no access then no sample will be collected.

B. Data Usage

The data will be used to determine whether there is PCB contamination in the floors in the impregnation room and in the solvents and oils currently in use for capacitor manufacturing.

C. Monitoring Network and Design:

Sampling will be performed by EPA. Split samples will be provided to the facility. Samples will be analyzed for PCB's. The impregnation room floor will be sampled using a random sampling scheme for 12 samples plus 1 duplicate (see attached floor plan). The floor plan was divided

into 10'x10' grids and numbered 1-96. A random number table was used to select the 12 grids to be sampled. Grids 26,62,38,75,84,16,7,44,83,11,46,32 were randomly selected. There will be 8 (plus 1 duplicate) additional floor samples collected. These will be selected onsite based on visual staining on the floor. The floor is wood and a small surface piece will be removed using a chisel. The sampling depth will be from 0-1/8 inch. The 5 clean and 5 dirty oils will be sampled from the petcocks on the sight glasses of the storage tanks. The solvent in the degreasing tanks, the stills, and recovered solvent tanks will be sampled according to possible access locations determined while on site. The samples will be collected directly in the sample container or if necessary sampled with a drum thief and transferred to the sample container.

D. Monitoring Parameters and Frequency of Collection:

<u>Parameter</u>	<u>Number of Samples</u>	<u>Sample Matrix</u>	<u>Analytical Method Reference</u>	<u>Sample Preservation</u>	<u>Holding Time</u>
=====					
<u>liquid samples</u>					
PCB	16 plus 2 dup.	liquid	modified method 8081	cool 4 C	7 days extr./ 40 days after extr.
<u>solid samples</u>					
PCB	20 plus 2 dup. 1 equip. blank	solid	modified method 8081	cool 4 C	7 days extr./ 40 days after extr.

*EPA Lexington lab procedure based on EPA Contract Laboratory Program Statement of Work for Organic Analysis

9. Schedule of Tasks and Products:

<u>Date</u>	<u>Activity</u>
June 3, 1997	Request OEME lab Support
June 25-27, 1997	Conduct Sampling
June 27, 1997	Deliver samples to lab
June 27-July 27, 1997	Laboratory analyses , data QA/QC
August 8, 1997	Results to Project Manager .

10. **Project Organization and Responsibility:**

The following is a list of key project personnel and their responsibilities:

Sampling Operations - Dan Granz
Sampling QC - Jay Pimpare
Laboratory Analysis - Bill Andrade
Laboratory QC - Bill Andrade
Performance Auditing - QA office
Overall Project Coordination - Dan Granz

11. **Data Quality Requirements and Assessments:**

Accuracy and precision values are for method internal QA/QC. The values are to be considered as project specific goals because some analyte list compounds are known to be outside the stated goals.

Parameter	Sample Matrix	Quantant. Limit	Lab. dup. Accuracy	RSD's Precision	Precision
*PCB	liquid	1 ppm	50-150	+/-25%	30% Field
**					Precision
*PCB	solid	1 ppm	50-150	+/-25%	30% Field
					Precision

* Note: Samples that are above the calibration range, will be diluted and re-analyzed to within an acceptable calibration range

** Note: PCB detections will be confirmed on a second analytical column.

12. **Data Representativeness:**

The data will be used to estimate the current status of the Aerovox facility for possible PCB contamination.

Data Comparability:

The data are to be compared to TSCA processing, use, and regulatory limits. If the data on detects are greater than 30% RPD, then corrective action may be required.

Data Completeness:

At least 90% of data must be valid. If data is incomplete, the project manager and OEME personnel will determine if resampling is needed.

13. Sampling Procedures:

Sampling will be performed by EPA personnel. The liquid samples will be collected directly into the sample containers whenever possible. A drum thief will be used if necessary. The solid samples will be removed from the floor using a chisel and the chip placed in the pre cleaned sample container. The sampling chisel will be decontaminated with hexane before each sample location.

14: Sample Custody Procedures:

USEPA OEME SOP for Chain-of-Custody.

15. Calibration Procedures and Preventative Maintenance:

PID by manufacturer's recommendation

16. Documentation, Data Reduction, and Reporting:

A. Documentation:

All information will be recorded in the samplers log books and/or the field data cards.

B. Data Reduction and Reporting:

The data will be tabulated and reported to the project manager.

17. Data Validation:

The data will be evaluated by the ESD laboratory prior to the report release to the Project Manager, since all analyses will be performed by the EPA laboratory.

18. Performance and Systems Audits:

May be performed by the QA Office if corrective actions are warranted.

19. Corrective Action:

Will be determined by the EPA Manager if necessary.

19. Reports:

Will be sent to:

Marianne Milette
Office of Environmental Stewardship
Air Technical SEA



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

ENVIRONMENTAL SERVICES DIVISION

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173-3185

DATE: August 6, 1997

SUBJ: Analysis of PCBs in Soils - AEROVOX

FROM: Peter Philbrook, Investigations and Analysis, Chemistry Section

THRU: ^{RSP} Dr. William J. Andrade, Advanced Analytical Chemistry Specialist

TO: Marianne Millette

PROJECT NUMBER: 97286

ANALYTICAL PROCEDURE:

All samples were received and logged in by the laboratory according to the chain of custody SOP (G-2, Rev 3, 1/93, DCN: CH-001/88).

EPA Region 1 Procedure: Polychlorinated Biphenyls in Soil Samples, Mid Level Method, PCBSOML5.SOP. The modules used for this procedure were: XL 2020 Heat Systems Sonicator, SONICAT2.MOD, Chlorinated Pesticides and PCB Screening, 8500EC1.MOD, 5880 Gas Chromatographs, 5880EC2.MOD.

Results are reported out in dry weight.

The analytical support for this report was performed by AARP contractors.

Date Samples Received by the Laboratory: 06/26/97

Date Analysis Started: 07/07/97

cc:

File: J:\CHEMISTRY\REPORTS\PCB-PEST\97286SO.PCB



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QUALITY CONTROL:

1. One method blank was included in the analysis.
2. Each sample was spiked with the surrogate compounds, tetrachloroethylene and decachlorobiphenyl, at approximately 0.2 mg/Kg. The results for the surrogate recoveries are reported out with each sample.
3. Sample KNT062597S10A was spiked as a matrix spike with Aroclor-1260 at approximately 1.0 mg/Kg. The recovery could not be determined due to dilutions necessary to quantitate target compounds. Target compound results are listed below.

PCB	Recovery (%)	QC Range (%)
Aroclor 1260	N/A	46 - 153

OTHER COMPOUNDS QUANTITATED

PCB	Conc. (mg/Kg)	Qualifier
Aroclor 1242	2100	P
Aroclor 1254	3700	

4. Sample KNT062597S20A was spiked as a matrix spike with Aroclor-1260 at approximately 1.0 mg/Kg. The recovery could not be determined due to dilutions necessary to quantitate target compounds. Target compound results are listed below.

PCB	Recovery (%)	QC Range (%)
Aroclor 1260	N/A	46 - 153

OTHER COMPOUNDS QUANTITATED

PCB	Conc. (mg/Kg)	Qualifier
Aroclor 1242	2000	P
Aroclor 1254	1400	

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5. Two samples, KNT062597S18A & KNT062597S19A were analyzed as field duplicates. The results are listed below.

Aroclor	18A mg/Kg	18A-DUP mg/Kg	RPD %	AVE mg/Kg
1242	1200	980	20	1090
1254	960	740	26	850

Aroclor	19A mg/Kg	19A-DUP mg/Kg	RPD %	AVE mg/Kg
1242	9700	6100	45	7900
1254	1500	1100	31	1300

SAMPLES ANALYZED : KNT062597S01A, KNT062597S02A, KNT062597S03A,
KNT062597S04A, KNT062597S05A, KNT062597S06A,
KNT062597S07A, KNT062597S08A, KNT062597S09A,
KNT062597S10A, KNT062597S11A, KNT062597S12A,
KNT062597S13A, KNT062597S14A, KNT062597S15A,
KNT062597S16A, KNT062597S17A, KNT062597S18A,
KNT062597S19A, KNT062597S20A, KNT062597S10A.MS,
KNT062597S20A.MS, KNT062597S18A-D,
KNT062597S19A-D, WOOD BLANK

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Lexington, MA 02173

Chemist who reviewed data: Peter Philbrook

Holding time meet (Y/N): Yes
Extraction (Water - 7 days, Soil - 14 days)
Analytical (40 days after extraction)

Method modifications: None

Limitations of data: All wood chip samples required high dilutions to quantitate target compounds.

Laboratory blank problems: None

Instrument performance problems: None

Surrogate and spike recovery problems: Surrogate and matrix spike recoveries could not be determined due to dilutions required to quantitate target compounds.

Additional comments: This report replaces the report dated July 31, 1997. There are two modifications in this report, both are typographical corrections and are as follows, sample # KNT062597S02A contained Aroclor 1242 at 540 mg/Kg not 1232 at 540 mg/Kg, and sample # KNT062597S06A contained Aroclor 1254 at 2100 mg/Kg not Aroclor 1248 at 2100 mg/Kg.

FACILITY SAMPLED:

AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:WOOD BLANK

DATE OF COLLECTION: NOT APPLICABLE

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/18/97

DRY WEIGHT EXTRACTED: 3.03g

WET WEIGHT EXTRACTED: 3.03g

Matrix:

WOOD

Final Volume: 5mL

Percent Moisture 0

Extract Dilution NONE

Report Factor: 1.0

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	0.17	
11104-28-2	Aroclor-1221	ND	0.17	
11141-16-5	Aroclor-1232	ND	0.17	
53469-21-9	Aroclor-1242	ND	0.17	
12672-29-6	Aroclor-1248	ND	0.17	
11097-69-1	Aroclor-1254	ND	0.17	
11096-82-5	Aroclor-1260	ND	0.17	
11100-14-4	Aroclor-1262	ND	0.17	
37324-23-5	Aroclor-1268	ND	0.17	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl

80

2,4,5,6-Tetrachloro-m-xylene

80

Notes:

RL = Reporting level

ND = None detected

~ = Approximate

< = Less than

> = Greater than

NA = Not applicable due to high sample
dilutions or sample interferences

E = Estimated value exceeds the calibration range

L = Estimated value is below the calibration range

B = Analyte is associated with the lab blank or trip blank
contamination. Values are qualified when the observed
concentration of the contaminant in the sample extract
is less than ten times the concentration in the blank.P = The confirmation value exceeded 35% difference and is
less than 100%. The lower value is reported.

D = Detected but too low to quantitate.

C = The identification has been confirmed by GC/MS.

FACILITY SAMPLED: AEROVOX
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S01A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/07/97
 DATE OF ANALYSIS: 07/18/97 & 07/22/97
 DRY WEIGHT EXTRACTED: 2.85g
 WET WEIGHT EXTRACTED: 3.03g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture: 6.2
 Dilution Factor: 1000X
 Report Factor: 1032

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	180	
11104-28-2	Aroclor-1221	ND	180	
11141-16-5	Aroclor-1232	ND	180	
53469-21-9	Aroclor-1242	3500	180	P
12672-29-6	Aroclor-1248	ND	180	
11097-69-1	Aroclor-1254	1600	180	
11096-82-5	Aroclor-1260	ND	180	
11100-14-4	Aroclor-1262	ND	180	
37324-23-5	Aroclor-1268	ND	180	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S02A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/07/97
 DATE OF ANALYSIS: 07/18/97
 DRY WEIGHT EXTRACTED: 2.95g
 WET WEIGHT EXTRACTED: 3.13g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture 5.8
 Dilution Factor: 1000X
 Report Factor: 1000

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	170	
11104-28-2	Aroclor-1221	ND	170	
11141-16-5	Aroclor-1232	ND	170	
53469-21-9	Aroclor-1242	540	170	P
12672-29-6	Aroclor-1248	ND	170	
11097-69-1	Aroclor-1254	640	170	
11096-82-5	Aroclor-1260	ND	170	
11100-14-4	Aroclor-1262	ND	170	
37324-23-5	Aroclor-1268	ND	170	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S03A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/07/97
 DATE OF ANALYSIS: 07/18/97
 DRY WEIGHT EXTRACTED: 1.95g
 WET WEIGHT EXTRACTED: 2.08g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture: 6.4
 Dilution Factor: 1000X
 Report Factor: 1508

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	260	
11104-28-2	Aroclor-1221	ND	260	
11141-16-5	Aroclor-1232	ND	260	
53469-21-9	Aroclor-1242	770	260	P
12672-29-6	Aroclor-1248	ND	260	
11097-69-1	Aroclor-1254	870	260	
11096-82-5	Aroclor-1260	ND	260	
11100-14-4	Aroclor-1262	ND	260	
37324-23-5	Aroclor-1268	ND	260	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S04A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 7/18/97 & 07/22/97

DRY WEIGHT EXTRACTED: 2.84g

WET WEIGHT EXTRACTED: 3.10g

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 8.4
Dilution Factor: 1000X
Report Factor: 1036

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	180	
11104-28-2	Aroclor-1221	ND	180	
11141-16-5	Aroclor-1232	ND	180	
53469-21-9	Aroclor-1242	3800	180	P
12672-29-6	Aroclor-1248	ND	180	
11097-69-1	Aroclor-1254	2200	180	
11096-82-5	Aroclor-1260	ND	180	
11100-14-4	Aroclor-1262	ND	180	
37324-23-5	Aroclor-1268	ND	180	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl

N/A

2,4,5,6-Tetrachloro-m-xylene

N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S05A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/18/97 & 07/22/97

DRY WEIGHT EXTRACTED: 2.89g

WET WEIGHT EXTRACTED: 3.12G

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 7.1
Dilution Factor: 1000X
Report Factor: 1018

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	170	
11104-28-2	Aroclor-1221	ND	170	
11141-16-5	Aroclor-1232	ND	170	
53469-21-9	Aroclor-1242	4300	170	
12672-29-6	Aroclor-1248	ND	170	
11097-69-1	Aroclor-1254	2200	170	
11096-82-5	Aroclor-1260	ND	170	
11100-14-4	Aroclor-1262	ND	170	
37324-23-5	Aroclor-1268	ND	170	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl
2,4,5,6-Tetrachloro-m-xylene

N/A
N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S06A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/21/97 & 07/22/97

DRY WEIGHT EXTRACTED: 3.07g

WET WEIGHT EXTRACTED: 3.33

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 8
Dilution Factor: 1000X
Report Factor: 958

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	160	
11104-28-2	Aroclor-1221	ND	160	
11141-16-5	Aroclor-1232	ND	160	
53469-21-9	Aroclor-1242	2400	160	P
12672-29-6	Aroclor-1248	ND	160	
11097-69-1	Aroclor-1254	2100	160	
11096-82-5	Aroclor-1260	ND	160	
11100-14-4	Aroclor-1262	ND	160	
37324-23-5	Aroclor-1268	ND	160	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl
2,4,5,6-Tetrachloro-m-xylene

N/A
N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S07A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/19/97 & 07/22/97

DRY WEIGHT EXTRACTED: 2.86g

WET WEIGHT EXTRACTED: 3.12g

Matrix: WOOD

Final Volume: 5mL

Percent Moisture 8.3

Dilution Factor: 2000X

Report Factor: 2057

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	350	
11104-28-2	Aroclor-1221	ND	350	
11141-16-5	Aroclor-1232	ND	350	
53469-21-9	Aroclor-1242	6500	350	P
12672-29-6	Aroclor-1248	ND	350	
11097-69-1	Aroclor-1254	5600	350	
11096-82-5	Aroclor-1260	ND	350	
11100-14-4	Aroclor-1262	ND	350	
37324-23-5	Aroclor-1268	ND	350	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl
2,4,5,6-Tetrachloro-m-xylene

N/A
N/A

FACILITY SAMPLED: AEROVOX
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S08A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/07/97
 DATE OF ANALYSIS: 07/19/97
 DRY WEIGHT EXTRACTED: 2.67g
 WET WEIGHT EXTRACTED: 2.86g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture: 6.5
 Dilution Factor: 1000X
 Report Factor: 1101

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	190	
11104-28-2	Aroclor-1221	ND	190	
11141-16-5	Aroclor-1232	ND	190	
53469-21-9	Aroclor-1242	1900	190	P
12672-29-6	Aroclor-1248	ND	190	
11097-69-1	Aroclor-1254	1300	190	
11096-82-5	Aroclor-1260	ND	190	
11100-14-4	Aroclor-1262	ND	190	
37324-23-5	Aroclor-1268	ND	190	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S09A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/19/97 & 07/22/97

DRY WEIGHT EXTRACTED: 3.15g

WET WEIGHT EXTRACTED: 3.37g

Matrix: WOOD

Final Volume: 5mL

Percent Moisture 6.4

Dilution Factor: 2000X

Report Factor: 1867

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	320	
11104-28-2	Aroclor-1221	ND	320	
11141-16-5	Aroclor-1232	ND	320	
53469-21-9	Aroclor-1242	3300	320	
12672-29-6	Aroclor-1248	ND	320	
11097-69-1	Aroclor-1254	3600	320	
11096-82-5	Aroclor-1260	ND	320	
11100-14-4	Aroclor-1262	ND	320	
37324-23-5	Aroclor-1268	ND	320	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl

N/A

2,4,5,6-Tetrachloro-m-xylene

N/A

FACILITY SAMPLED: AEROVOX
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S10A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/07/97
 DATE OF ANALYSIS: 07/19/97
 DRY WEIGHT EXTRACTED: 2.81g
 WET WEIGHT EXTRACTED: 3.02g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture: 6.6
 Dilution Factor: 1000X
 Report Factor: 1047

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	180	
11104-28-2	Aroclor-1221	ND	180	
11141-16-5	Aroclor-1232	ND	180	
53469-21-9	Aroclor-1242	1100	180	
12672-29-6	Aroclor-1248	ND	180	
11097-69-1	Aroclor-1254	1300	180	
11096-82-5	Aroclor-1260	ND	180	
11100-14-4	Aroclor-1262	ND	180	
37324-23-5	Aroclor-1268	ND	180	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S11A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/21/97 & 07/22/97

DRY WEIGHT EXTRACTED: 3.07

WET WEIGHT EXTRACTED: 3.44

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 10.9
Dilution Factor: 8000X
Report Factor: 7660

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	1300	
11104-28-2	Aroclor-1221	ND	1300	
11141-16-5	Aroclor-1232	ND	1300	
53469-21-9	Aroclor-1242	14,500	1300	
12672-29-6	Aroclor-1248	ND	1300	
11097-69-1	Aroclor-1254	16,500	1300	
11096-82-5	Aroclor-1260	ND	1300	
11100-14-4	Aroclor-1262	ND	1300	
37324-23-5	Aroclor-1268	ND	1300	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl
2,4,5,6-Tetrachloro-m-xylene

N/A
N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S12A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/19/97

DRY WEIGHT EXTRACTED: 2.83g

WET WEIGHT EXTRACTED: 3.05g

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 7.3
Dilution Factor: 4000X
Report Factor: 4157

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	710	
11104-28-2	Aroclor-1221	ND	710	
11141-16-5	Aroclor-1232	ND	710	
53469-21-9	Aroclor-1242	8700	710	
12672-29-6	Aroclor-1248	ND	710	
11097-69-1	Aroclor-1254	7100	710	
11096-82-5	Aroclor-1260	ND	710	
11100-14-4	Aroclor-1262	ND	710	
37324-23-5	Aroclor-1268	ND	710	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)
Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S13A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/19/97

DRY WEIGHT EXTRACTED: 3.02g

WET WEIGHT EXTRACTED: 3.31

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 8.9
Dilution Factor: 4000X
Report Factor: 3896

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	660	
11104-28-2	Aroclor-1221	ND	660	
11141-16-5	Aroclor-1232	ND	660	
53469-21-9	Aroclor-1242	2200	660	P
12672-29-6	Aroclor-1248	ND	660	
11097-69-1	Aroclor-1254	13,900	660	
11096-82-5	Aroclor-1260	ND	660	
11100-14-4	Aroclor-1262	ND	660	
37324-23-5	Aroclor-1268	ND	660	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl
2,4,5,6-Tetrachloro-m-xylene

N/A
N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S14A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/19/97

DRY WEIGHT EXTRACTED: 3.09g

WET WEIGHT EXTRACTED: 3.32g

Matrix: WOOD
Final Volume: 5mL
Percent Moisture: 6.9
Dilution Factor: 4000
Report Factor: 3807

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	650	
11104-28-2	Aroclor-1221	ND	650	
11141-16-5	Aroclor-1232	ND	650	
53469-21-9	Aroclor-1242	970	650	P
12672-29-6	Aroclor-1248	ND	650	
11097-69-1	Aroclor-1254	7200	650	
11096-82-5	Aroclor-1260	ND	650	
11100-14-4	Aroclor-1262	ND	650	
37324-23-5	Aroclor-1268	ND	650	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S15A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/19/97

DRY WEIGHT EXTRACTED: 3.85

WET WEIGHT EXTRACTED: 3.96

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 2.7
Dilution Factor: 2000X
Report Factor: 2139

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	360	
11104-28-2	Aroclor-1221	ND	360	
11141-16-5	Aroclor-1232	ND	360	
53469-21-9	Aroclor-1242	1900	360	P
12672-29-6	Aroclor-1248	ND	360	
11097-69-1	Aroclor-1254	2800	360	
11096-82-5	Aroclor-1260	ND	360	
11100-14-4	Aroclor-1262	ND	360	
37324-23-5	Aroclor-1268	ND	360	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl
2,4,5,6-Tetrachloro-m-xylene

N/A
N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S16A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/07/97

DATE OF ANALYSIS: 07/19/97 & 07/22/97

DRY WEIGHT EXTRACTED: 2.75g

WET WEIGHT EXTRACTED: 3.03g

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 9.3
Dilution Factor: 4000X
Report Factor: 4232

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	720	
11104-28-2	Aroclor-1221	ND	720	
11141-16-5	Aroclor-1232	ND	720	
53469-21-9	Aroclor-1242	15,300	720	
12672-29-6	Aroclor-1248	ND	720	
11097-69-1	Aroclor-1254	8700	720	
11096-82-5	Aroclor-1260	ND	720	
11100-14-4	Aroclor-1262	ND	720	
37324-23-5	Aroclor-1268	ND	720	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl
2,4,5,6-Tetrachloro-m-xylene

N/A
N/A

FACILITY SAMPLED: AEROVOX
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S17A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/08/97
 DATE OF ANALYSIS: 07/19/97
 DRY WEIGHT EXTRACTED: 3.26g
 WET WEIGHT EXTRACTED: 3.45g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture: 5.5
 Dilution Factor: 1000X
 Report Factor: 902

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	150	
11104-28-2	Aroclor-1221	ND	150	
11141-16-5	Aroclor-1232	ND	150	
53469-21-9	Aroclor-1242	480	150	P
12672-29-6	Aroclor-1248	ND	150	
11097-69-1	Aroclor-1254	860	150	
11096-82-5	Aroclor-1260	ND	150	
11100-14-4	Aroclor-1262	ND	150	
37324-23-5	Aroclor-1268	ND	150	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S18A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/08/97
 DATE OF ANALYSIS: 07/19/97
 DRY WEIGHT EXTRACTED: 3.17g
 WET WEIGHT EXTRACTED: 3.42g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture: 7.3
 Dilution Factor: 1000X
 Report Factor: 928

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	160	
11104-28-2	Aroclor-1221	ND	160	
11141-16-5	Aroclor-1232	ND	160	
53469-21-9	Aroclor-1242	1200	160	P
12672-29-6	Aroclor-1248	ND	160	
11097-69-1	Aroclor-1254	960	160	
11096-82-5	Aroclor-1260	ND	160	
11100-14-4	Aroclor-1262	ND	160	
37324-23-5	Aroclor-1268	ND	160	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S19A

DATE OF COLLECTION: 06/26/97

DATE OF EXTRACTION: 07/08/97

DATE OF ANALYSIS: 07/19/97

DRY WEIGHT EXTRACTED: 2.62g

WET WEIGHT EXTRACTED: 3.0g

Matrix: WOOD
Final Volume: 5mL
Percent Moisture 12.6
Dilution Factor: 4000X
Report Factor: 4490

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	760	
11104-28-2	Aroclor-1221	ND	760	
11141-16-5	Aroclor-1232	ND	760	
53469-21-9	Aroclor-1242	9700	760	
12672-29-6	Aroclor-1248	ND	760	
11097-69-1	Aroclor-1254	1500	760	
11096-82-5	Aroclor-1260	ND	760	
11100-14-4	Aroclor-1262	ND	760	
37324-23-5	Aroclor-1268	ND	760	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A

FACILITY SAMPLED: AEROVOX
 US ENVIRONMENTAL PROTECTION AGENCY
 REGION I LABORATORY
 Polychlorinated Biphenyls

SAMPLE NO.:KNT062597S20A

DATE OF COLLECTION: 06/26/97
 DATE OF EXTRACTION: 07/08/97
 DATE OF ANALYSIS: 07/19/97
 DRY WEIGHT EXTRACTED: 1.92g
 WET WEIGHT EXTRACTED: 2.10g

Matrix: WOOD
 Final Volume: 5mL
 Percent Moisture: 8.2
 Dilution Factor: 1000X
 Report Factor: 1532

SAMPLE RESULTS:

CAS NO.	Compound	Conc. (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	260	
11104-28-2	Aroclor-1221	ND	260	
11141-16-5	Aroclor-1232	ND	260	
53469-21-9	Aroclor-1242	1800	260	P
12672-29-6	Aroclor-1248	ND	260	
11097-69-1	Aroclor-1254	1300	260	
11096-82-5	Aroclor-1260	ND	260	
11100-14-4	Aroclor-1262	ND	260	
37324-23-5	Aroclor-1268	ND	260	

Sample Recovery for
 Surrogate Compound:

Observed
 Recoveries (%)

Decachlorobiphenyl	N/A
2,4,5,6-Tetrachloro-m-xylene	N/A



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION I
60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173

DATE: July 31, 1997
SUBJ: Analysis of PCBs in Transformer Fluid and Waste Oils - **Aerovox**
FROM: Peter Philbrook, Chemistry Section
THRU: Dr. William J. Andrade, Advanced Analytical Chemistry Specialist
TO: Marianne Millette *WJA 8/5/97*

PROJECT NUMBER: 97286

ANALYTICAL PROCEDURE:

All samples were received and logged in by the laboratory according to the chain of custody SOP (G-2, Rev 3, 1/93, DCN: CH-001/88).

EPA Region 1 Procedure: Medium Level Polychlorinated Biphenyls (PCBs) in Oil Samples, PCBOIML1.SOP.

The analytical support for this report was performed by AARP contractors.

Date(s) Samples Received by the Laboratory: 06-26-97

Date Analysis Started: 06-30-97

cc:

File: J:\CHEMISTRY\REPORTS\PCB-PEST\97286OI.PCB

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02173

QUALITY CONTROL:

1. One method blank was included in the analysis.
2. Each sample was spiked with the surrogate compounds, tetrachloroethylene and decachlorobiphenyl at approximately 10 mg/Kg. The recoveries are reported out with the data.
3. One sample, KNT062597S21A, was spiked with Aroclor-1260 at approximately 60 mg/Kg. The recovery is listed below.

PCB	Recovery (%)
Aroclor-1260	112%

4. One sample, KNT062597S32A, was spiked with Aroclor-1260 at approximately 60 mg/Kg. The recovery is listed below.

PCB	Recovery (%)
Aroclor-1260	127%

5. A quality control sample, WP-1186, was extracted and analyzed with the samples. The sample was a performance evaluation sample which contained Aroclor 1260 in transformer oil. The results are listed below.

Sample No.	Aroclor 1260 mg/Kg	Acceptance Range mg/Kg	% Recovery
WP-1186	39.5	28.7 - 55.9	88%

True Value =45.0

6. One sample, KNT062597S28A, was analyzed in duplicate. The results of the analyses are listed below.

KNT062597S28A	KNT062597S28A Duplicate	%D
ND	ND	0

SAMPLE(S) ANALYZED: KNT062597S21A, KNT062597S21A MS, KNT062597S22A, KNT062597S23A, KNT062597S24A, KNT062597S25A, KNT062597S26A, KNT062597S27A, KNT062597S28A, KNT062597S28A DUP, KNT062597S29A, KNT062597S30A, KNT062597S31A, KNT062597S32A, KNT062597S32A MS, QC WP1186, BLANK

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02173

Chemist who reviewed data: Peter Philbrook

Holding times meet (Y/N): Yes
Extraction (Water - 7 days, Soils - 14 days)
Analytical (40 days after extraction)

Method modifications: None

Limitations of data: None

Laboratory blank problems: None

Instrument performance problems: None

Surrogate and spike recovery problems: None

Additional comments: None

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: Blank

DATE SAMPLED: Not Applicable

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1000 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: None

Report Factor: 1.00

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	10	
11104-28-2	Aroclor-1221	ND	10	
11141-16-5	Aroclor-1232	ND	10	
53469-21-9	Aroclor-1242	ND	10	
12672-29-6	Aroclor-1248	ND	10	
11097-69-1	Aroclor-1254	ND	10	
11096-82-5	Aroclor-1260	ND	10	
11100-14-4	Aroclor-1262	ND	10	
37324-23-5	Aroclor-1268	ND	10	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)
---	-------------------------

Decachlorobiphenyl	85
2,4,5,6-Tetrachloro-m-xylene	83

Notes:

RL = Reporting limit

(6E+00 = 6, 1E+01 = 10, 4E-01 = 0.4)

ND = None detected

~ = Approximate

< = Less than

> = Greater than

NA = Not applicable due to sample dilutions or interferences

E = Estimated value exceeds calibration range

L = Estimated value is below the calibration range

B = Analyte is associated with the lab blank or trip blank contamination. Values are qualified when the observed concentration of the contaminant in the sample extract is less than ten times the concentration in the blank.

P = The contamination value exceeds 35% difference and is less than 100%. The lower value is reported.

D = Detected but too low to quantitate

C = The identification has been confirmed by GC/MS

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S21A

DATE SAMPLED: 06-06-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1015 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 1.00

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	10	
11104-28-2	Aroclor-1221	ND	10	
11141-16-5	Aroclor-1232	ND	10	
53469-21-9	Aroclor-1242	ND	10	
12672-29-6	Aroclor-1248	ND	10	
11097-69-1	Aroclor-1254	ND	10	
11096-82-5	Aroclor-1260	ND	10	
11100-14-4	Aroclor-1262	ND	10	
37324-23-5	Aroclor-1268	ND	10	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	90
2,4,5,6-Tetrachloro-m-xylene	87

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S22A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-19-97

AMOUNT EXTRACTED: 0.1004 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 1.00

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	10	
11104-28-2	Aroclor-1221	ND	10	
11141-16-5	Aroclor-1232	ND	10	
53469-21-9	Aroclor-1242	ND	10	
12672-29-6	Aroclor-1248	ND	10	
11097-69-1	Aroclor-1254	ND	10	
11096-82-5	Aroclor-1260	ND	10	
11100-14-4	Aroclor-1262	ND	10	
37324-23-5	Aroclor-1268	ND	10	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	78
2,4,5,6-Tetrachloro-m-xylene	75

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S23A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1003 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 1.00

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	10	
11104-28-2	Aroclor-1221	ND	10	
11141-16-5	Aroclor-1232	ND	10	
53469-21-9	Aroclor-1242	ND	10	
12672-29-6	Aroclor-1248	ND	10	
11097-69-1	Aroclor-1254	ND	10	
11096-82-5	Aroclor-1260	ND	10	
11100-14-4	Aroclor-1262	ND	10	
37324-23-5	Aroclor-1268	ND	10	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	90
2,4,5,6-Tetrachloro-m-xylene	64

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S24A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1235 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.81

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	8.1	
11104-28-2	Aroclor-1221	ND	8.1	
11141-16-5	Aroclor-1232	ND	8.1	
53469-21-9	Aroclor-1242	ND	8.1	
12672-29-6	Aroclor-1248	ND	8.1	
11097-69-1	Aroclor-1254	ND	8.1	
11096-82-5	Aroclor-1260	ND	8.1	
11100-14-4	Aroclor-1262	ND	8.1	
37324-23-5	Aroclor-1268	ND	8.1	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	45
2,4,5,6-Tetrachloro-m-xylene	53

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S25A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1136 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.88

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	8.8	
11104-28-2	Aroclor-1221	ND	8.8	
11141-16-5	Aroclor-1232	ND	8.8	
53469-21-9	Aroclor-1242	ND	8.8	
12672-29-6	Aroclor-1248	ND	8.8	
11097-69-1	Aroclor-1254	ND	8.8	
11096-82-5	Aroclor-1260	ND	8.8	
11100-14-4	Aroclor-1262	ND	8.8	
37324-23-5	Aroclor-1268	ND	8.8	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	72
2,4,5,6-Tetrachloro-m-xylene	71

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S26A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1091 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.92

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	9.2	
11104-28-2	Aroclor-1221	ND	9.2	
11141-16-5	Aroclor-1232	ND	9.2	
53469-21-9	Aroclor-1242	ND	9.2	
12672-29-6	Aroclor-1248	ND	9.2	
11097-69-1	Aroclor-1254	ND	9.2	
11096-82-5	Aroclor-1260	ND	9.2	
11100-14-4	Aroclor-1262	ND	9.2	
37324-23-5	Aroclor-1268	ND	9.2	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	75
2,4,5,6-Tetrachloro-m-xylene	72

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S27A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1067 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.94

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	9.4	
11104-28-2	Aroclor-1221	ND	9.4	
11141-16-5	Aroclor-1232	ND	9.4	
53469-21-9	Aroclor-1242	ND	9.4	
12672-29-6	Aroclor-1248	ND	9.4	
11097-69-1	Aroclor-1254	ND	9.4	
11096-82-5	Aroclor-1260	ND	9.4	
11100-14-4	Aroclor-1262	ND	9.4	
37324-23-5	Aroclor-1268	ND	9.4	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	73
2,4,5,6-Tetrachloro-m-xylene	81

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S28A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.0971 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 1.03

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	10	
11104-28-2	Aroclor-1221	ND	10	
11141-16-5	Aroclor-1232	ND	10	
53469-21-9	Aroclor-1242	ND	10	
12672-29-6	Aroclor-1248	ND	10	
11097-69-1	Aroclor-1254	ND	10	
11096-82-5	Aroclor-1260	ND	10	
11100-14-4	Aroclor-1262	ND	10	
37324-23-5	Aroclor-1268	ND	10	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	71
2,4,5,6-Tetrachloro-m-xylene	77

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S29A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1118 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.89

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	8.9	
11104-28-2	Aroclor-1221	ND	8.9	
11141-16-5	Aroclor-1232	ND	8.9	
53469-21-9	Aroclor-1242	ND	8.9	
12672-29-6	Aroclor-1248	ND	8.9	
11097-69-1	Aroclor-1254	ND	8.9	
11096-82-5	Aroclor-1260	ND	8.9	
11100-14-4	Aroclor-1262	ND	8.9	
37324-23-5	Aroclor-1268	ND	8.9	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	85
2,4,5,6-Tetrachloro-m-xylene	103

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S30A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1019 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.98

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	9.8	
11104-28-2	Aroclor-1221	ND	9.8	
11141-16-5	Aroclor-1232	ND	9.8	
53469-21-9	Aroclor-1242	ND	9.8	
12672-29-6	Aroclor-1248	ND	9.8	
11097-69-1	Aroclor-1254	ND	9.8	
11096-82-5	Aroclor-1260	ND	9.8	
11100-14-4	Aroclor-1262	ND	9.8	
37324-23-5	Aroclor-1268	ND	9.8	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	81
2,4,5,6-Tetrachloro-m-xylene	96

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S31A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1142 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.88

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	8.8	
11104-28-2	Aroclor-1221	ND	8.8	
11141-16-5	Aroclor-1232	ND	8.8	
53469-21-9	Aroclor-1242	ND	8.8	
12672-29-6	Aroclor-1248	ND	8.8	
11097-69-1	Aroclor-1254	ND	8.8	
11096-82-5	Aroclor-1260	ND	8.8	
11100-14-4	Aroclor-1262	ND	8.8	
37324-23-5	Aroclor-1268	ND	8.8	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	79
2,4,5,6-Tetrachloro-m-xylene	91

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: KNT062597S32A

DATE SAMPLED: 06-26-97

DATE EXTRACTED: 06-30-97

DATE ANALYZED: 07-03-97

AMOUNT EXTRACTED: 0.1158 g

Matrix: Oil

Final Volume: 10 mL

Extract Dilution: NONE

Report Factor: 0.86

SAMPLE RESULTS:

CAS NO.	Compound	Amount (mg/Kg)	RL (mg/Kg)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	8.6	
11104-28-2	Aroclor-1221	ND	8.6	
11141-16-5	Aroclor-1232	ND	8.6	
53469-21-9	Aroclor-1242	ND	8.6	
12672-29-6	Aroclor-1248	ND	8.6	
11097-69-1	Aroclor-1254	ND	8.6	
11096-82-5	Aroclor-1260	ND	8.6	
11100-14-4	Aroclor-1262	ND	8.6	
37324-23-5	Aroclor-1268	ND	8.6	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	82
2,4,5,6-Tetrachloro-m-xylene	104



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION I

60 WESTVIEW STREET, LEXINGTON, MASSACHUSETTS 02173

DATE: July 31, 1997

SUBJ: Analysis of Polychlorinated Biphenyls (PCBs) in Wipe Samples - Aerovox

FROM: Peter Philbrook, Chemistry Section

THRU: Dr. William J. Andrade, Advanced Analytical Chemistry Specialist

TO: Marianne Millette

WDH 8/5/97

PROJECT NUMBER: 97286

ANALYTICAL PROCEDURE:

All samples were received and logged in by the laboratory according to the chain of custody SOP (G-2, Rev 3, 1/93, DCN: CH-001/88).

The wipe samples were extracted with 10 ml of hexane on a wrist shaker for 60 min. The extracts were screened on a 15 m, DB-5 capillary column using a Perkin Elmer 8500 gas chromatograph. Qualitative and quantitative analyses were done on a dual capillary system, Hewlett Packard 5880 gas chromatograph with two 30m, DB-1701 and DB-5, 0.25mm ID and a 0.25 micron film thickness. Results are reported out in total amount of PCBs observed.

The analytical support for this report was performed by AARP contractors.

Date(s) Samples Received by the Laboratory: 06-26-97

Date Analysis Started: 06-30-97

cc:

File: J:\CHEMISTRY\REPORTS\PCB-PEST\97286WI.PCB

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02173

QUALITY CONTROL:

1. One method blank was included in the analysis.
2. Each sample was spiked with the surrogate compounds, tetrachloroethylene (TCX) and decachlorobiphenyl (DCB), at 10 ug/wipe. The results for the surrogate recoveries are reported out with each sample.
3. One laboratory wipe was spiked with Aroclor-1260 at approximately 10 ug. The recovery is listed below.

PCB	Recovery (%)
1260	123

SAMPLES ANALYZED: 062597S33A, 062597S33A MS, BLANK

US ENVIRONMENTAL PROTECTION AGENCY
60 Westview Street
Lexington, MA 02173

Chemist who reviewed data: Peter Philbrook

Holding times meet (Y/N): Yes
Extraction (Water - 7 days, Soils - 14 days)
Analytical (40 days after extraction)

Method modifications: None

Limitations of data: None

Laboratory blank problems: None

Instrument performance problems: None

Surrogate and spike recovery problems: None

Additional comments: None

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.:BLANK

DATE OF COLLECTION: NOT APPLICABLE

DATE OF EXTRACTION: 06-30-97

DATE OF ANALYSIS: 07-03-97

AMOUNT EXTRACTED: 1 g

Matrix: Wipe
Final Volume: 10 mL
Extract Dilution: NONE
Report Factor: 1.00

SAMPLE RESULTS:

CAS NO.	Compound	Amount (ug/Wipe)	RL (ug/Wipe)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	1E+00	
11104-28-2	Aroclor-1221	ND	1E+00	
11141-16-5	Aroclor-1232	ND	1E+00	
53469-21-9	Aroclor-1242	ND	1E+00	
12672-29-6	Aroclor-1248	ND	1E+00	
11097-69-1	Aroclor-1254	ND	1E+00	
11096-82-5	Aroclor-1260	ND	1E+00	
11100-14-4	Aroclor-1262	ND	1E+00	
37324-23-5	Aroclor-1268	ND	1E+00	

Sample Recovery for Surrogate Compound:	Observed Recoveries (%)
Decachlorobiphenyl	92
2,4,5,6-Tetrachloro-m-xylene	115

Notes:

RL = Reporting limit
(6E+00 = 6, 1E+01 = 10, 4E-01 = 0.4)
ND = None detected
~ = Approximate
< = Less than
> = Greater than
NA = Not applicable due to high sample
dilutions or sample interferences
E = Estimated value exceeds the calibration range
L = Estimated value is below the calibration range
B = Analyte is associated with the lab blank or trip blank
contamination. Values are qualified when the observed
concentration of the contaminant in the sample extract
is less than ten times the concentration in the blank.
P = The confirmation value exceeded 35% difference and is
less than 100%. The lower value is reported.
D = Detected but too low to quantitate.
C = The identification has been confirmed by GC/MS.

FACILITY SAMPLED: Aerovox

US ENVIRONMENTAL PROTECTION AGENCY
REGION I LABORATORY
Polychlorinated Biphenyls

SAMPLE NO.: 062597S33A

DATE OF COLLECTION: 06-26-97

DATE OF EXTRACTION: 06-30-97

DATE OF ANALYSIS: 07-03-97

AMOUNT EXTRACTED: 1 g

Matrix:

Wipe

Final Volume:

10 mL

Extract Dilution:

NONE

Dilution Factor:

1.00

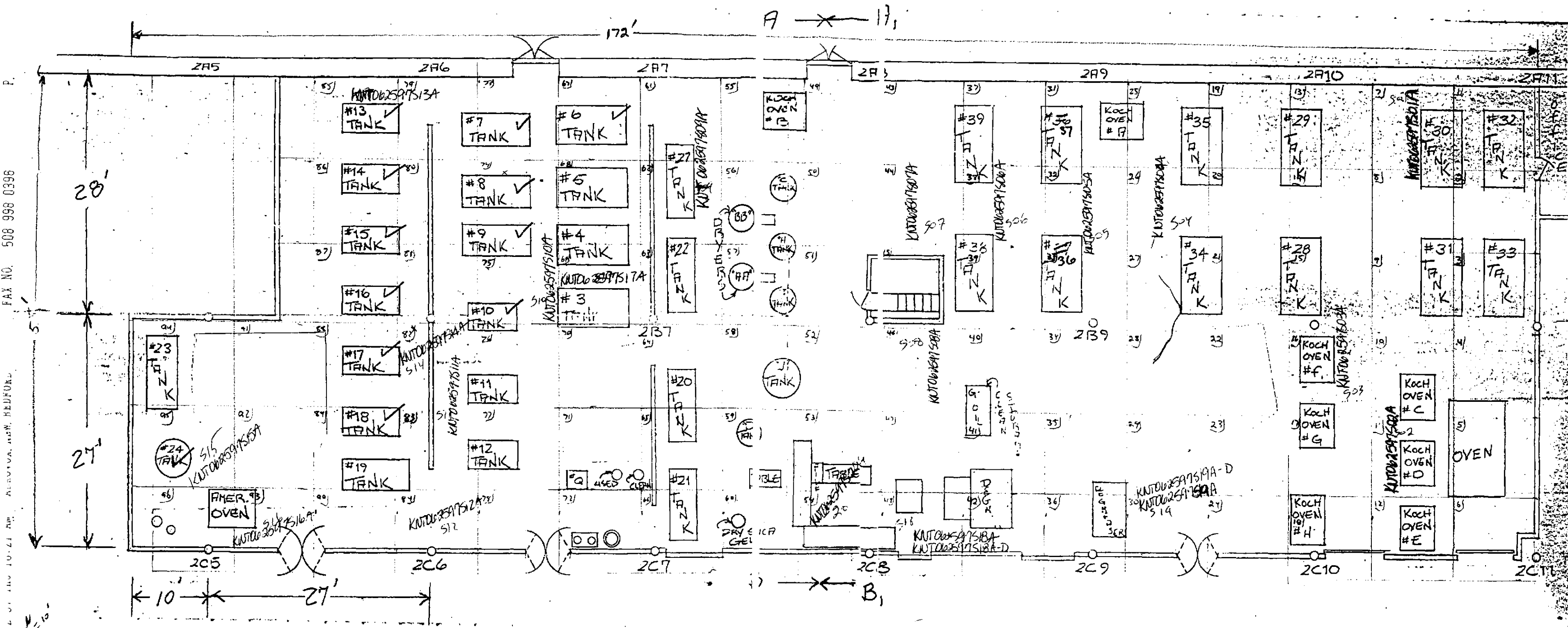
SAMPLE RESULTS:

CAS NO.	Compound	Amount (ug/Wipe)	RL (ug/Wipe)	Qualifier or Comment
12674-11-2	Aroclor-1016	ND	1E+00	
11104-28-2	Aroclor-1221	ND	1E+00	
11141-16-5	Aroclor-1232	ND	1E+00	
53469-21-9	Aroclor-1242	ND	1E+00	
12672-29-6	Aroclor-1248	ND	1E+00	
11097-69-1	Aroclor-1254	ND	1E+00	
11096-82-5	Aroclor-1260	ND	1E+00	
11100-14-4	Aroclor-1262	ND	1E+00	
37324-23-5	Aroclor-1268	ND	1E+00	

Sample Recovery for
Surrogate Compound:

Observed
Recoveries (%)

Decachlorobiphenyl	83
2,4,5,6-Tetrachloro-m-xylene	103



ENCLOSURE